

IN THE CLAIMS

Please amend the claims as follows:

1. (Cancelled)

2. (Currently Amended) The method of Method according to claim [[1]] 25, wherein the adjusting step further comprises:

~~characterized in that in the step of pre-equalizing~~ dividing the power of the subcarriers ~~is divided ( $10^{-10}$ )~~ by the sum of the squared magnitude of the frequency channel characteristics of ~~all~~ the plurality of antennas.

3. (Currently Amended) The method of Method according to claim [[1]] 25, wherein the adjusting step comprises:

~~characterized in that in the step of pre-equalizing the transmission~~ dividing the transmitted transmission signal ~~is divided ( $1, 1'$ )~~ by the magnitude of the a channel response vector.

4. (Currently Amended) The method of Method according to claim [[1]] 25, wherein the adjusting step comprises:

~~characterized in that in the step of pre-equalizing the transmission transmission~~ dividing the transmitted signal ~~is divided~~ by ~~the~~ a channel response vector.

5. (Currently Amended) The method of Method according to claim [[1]] 25, wherein the adjusting step comprises:

~~characterized in that in the pre-equalizing step (10, 10') furthermore compensating,~~  
respectively, the phase of the subcarrier signals is respectively compensated at a the  
transmission side according to the detected frequency channel characteristics (11, 11').

6. (Currently Amended) The method of Method according to claim 25 claim1, further  
comprising the step of:

selecting for transmission, an antenna element having the best channel characteristics  
for the subcarrier signal, based on ~~characterized in that depending on~~ the detected frequency  
channel characteristics (11, 11') at each antenna element (3, 3') for each subcarrier signal the  
antenna element (3, 3') ~~having the best channel characteristics (11, 11') for said subcarrier~~  
~~signal is used for transmission (2, 2').~~

7. (Currently Amended) The method of Method according to claim 25 claim1, further  
comprising the step of:

~~characterized in that the power of the transmission signal is distributed~~ distributing the  
power of the transmission signal to all of the plurality of antenna elements according to  
subcarrier frequency characteristics of ~~the a~~ corresponding antenna element (3, 3').

8. (Currently Amended) The method of Method according to claim [[1]]25, wherein  
the adjustment step comprises:

~~characterized in that the pre-equalization (1, 1') limiting an adjustment~~ of the  
magnitude power of the subcarrier signal ~~is limited~~ to an upper threshold.

9. (Currently Amended) The method of Method according to claim 8, further  
comprising the step of:

fixing the transmission power of the corresponding subcarrier at the upper threshold  
and adapting a modulation scheme for the subcarrier signal when characterized in that in case  
along with equalization (1, 1') the upper threshold is reached for the [[a]] subcarrier signal,  
~~the transmission power of the corresponding subcarrier signal is fixed at the upper threshold~~  
~~value and the modulation scheme for said subcarrier signal is adapted.~~

10. (Currently Amended) The method of ~~Method according to~~ claim 9, further  
comprising the step of:

~~characterized in that~~ signaling the adaptation of the modulation scheme of a subcarrier  
signal ~~is signaled to the~~ a receiving side (6).

11. (Currently Amended) The method of ~~Method according to~~ claim 9, further  
comprising the step of:

~~to adapt~~ adapting the modulation scheme of a subcarrier signal[[,]] by simplifying the  
modulation scheme ~~is simplified.~~

12. (Previously Presented) The method of ~~Method according to~~ claim 9, further  
comprising the step of:

~~to adapting~~ adapt the modulation scheme of a subcarrier signal[[,]] by not modulating  
the subcarrier signal ~~is not modulate at all.~~

13. (Previously Presented) The method of ~~Method according to~~ claim 9, wherein:  
in case when the modulation scheme of a subcarrier signal is adapted to reduce the bit  
rate of ~~this~~ the subcarrier signal, the modulation scheme of at least one other subcarrier signal  
is changed to a more complex modulation scheme.

14. (Currently Amended) The method of ~~Method according to claim 25 claim1,~~  
wherein the step of detecting frequency channel characteristics comprises:

detecting the frequency channel characteristics ~~characterized in that the detection (11,~~  
~~11')~~ of the frequency channel characteristics is performed on the basis of received pilot  
symbols.

15. (Currently Amended) Computer software program product configured to  
implement , ~~characterized in that it implements~~ a method according to claim ~~[[1]]~~25 when run  
on a computing device of a transmitting device.

16. (Canceled).

17. (Currently Amended) The device of ~~Device according to claim~~ ~~[[16]]~~26, wherein  
the means for adjusting comprises:

~~characterized in that the pre-equalizer (1, 1')~~ furthermore comprises a division means  
for(10, 10') dividing the subcarrier signals respectively by the a sum (9) of the squared  
magnitude of the frequency channel characteristics of all sub-carrier signal.

18. (Currently Amended) The device of ~~Device according to clam claim~~ ~~[[16]]~~26,  
wherein the means for adjusting comprises:

~~characterized in that it further more comprises~~ a phase compensator configured to  
adjust (1, 1') ~~for adjusting~~ the phase of the subcarriers respectively according to the detected  
frequency channel characteristics (11, 11').

19. (Currently Amended) The device of ~~Device according to~~ claim ~~[[16]]~~26, wherein:  
the means for adjusting ~~characterized in that the equalizer (1, 1')~~ limits the ~~power~~  
amplitude of the subcarrier ~~to~~ of an upper threshold.

20. (Currently Amended) The device of ~~Device according to~~ claim ~~[[16]]~~26, wherein:  
the transmission device is ~~characterized in that it is~~ a base station (5) of a wireless  
transmission system.

21. (New) A method for transmitting signals using a plurality of subcarriers through a  
plurality of antenna elements in multicarrier transmission system, the method comprising the  
steps of:

detecting channel response vectors corresponding to said plurality of antenna  
elements, wherein each of said channel response vectors includes subcarrier related elements  
corresponding to said plurality of subcarriers, and

adjusting transmission characteristics of said plurality of subcarriers in accordance  
with amplitude and/or phase of at least one of said detected channel response vectors.

22. (New) A method for transmitting signals using a plurality of subcarriers in  
transmission system, the method comprising the following steps:

generating said signals by using a plurality of antenna elements;

obtaining vector elements indicating channel transmission characteristics of said  
plurality of subcarriers at each of said plurality of antenna elements, wherein each of said  
vector elements is associated with one of said plurality of subcarriers, and

adjusting an amplitude and/or a phase of each of said plurality of subcarrier in  
accordance with said obtained vector elements.

23. (New) A method for transmitting signals using a plurality of subcarriers in transmission system, the method comprising the following steps:

- generating said signals by using a plurality of antenna elements;
- adjusting amplitudes and phases of said plurality of subcarriers on the bases of channel response vectors indicating subcarriers frequency characteristics of said plurality of subcarriers at each of said plurality of antenna elements.

24. (New) A method for transmitting orthogonal frequency division multiplex (OFDM) symbols to be transmitted by using a plurality of OFDM subcarriers in an OFDM transmission system, the method comprising the following steps:

- generating said OFDM symbols to be transmitted by using a plurality of antenna elements;
- obtaining channel response vectors corresponding to said plurality of antenna elements, wherein each of said channel response vectors has subcarrier related elements corresponding to said plurality of subcarriers, and
- applying weighting value to each of said plurality of subcarriers of said OFDM symbols in accordance with a complex conjugate of said obtained channel response vectors.

25. (New) A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

- detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

adjusting at least one of the amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels, and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements.

26. (New) A transmission device adapted for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a multi-carrier transmission system, wherein the OFDM signal uses a plurality of subcarriers,

the transmission device comprising:

means for detecting the frequency subcarrier channel characteristics of each of the plurality of subcarriers for each of said plurality of antenna elements,

means for adjusting amplitude and/or phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier channel, and

means for transmitting the OFDM signal by using the adjusted subcarrier signals via the plurality of antenna elements.